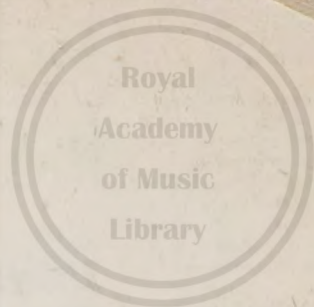
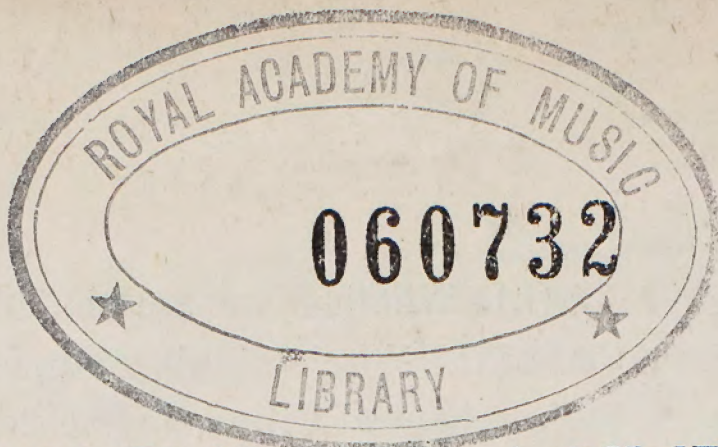


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THE PROBLEMS OF AGILITY,

— BY —

TOBIAS MATTHAY.

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PREAMBLE. — It having been brought to my ears that certain "Wireless officers of a squadron of H. M. Navy" (the location of which must not be divulged for fear of D.O.R.A.) had found the "Act of Touch"* of immediate help in their work, I felt it might be doing a service to such, and others, if I summarized in concentrated form the laws governing Agility in utterance — laws which were formulated for the first time in that rather ponderous work. Hence, the present "Practice Card."

These laws, which govern speed in the utterance of successive notes and the repetition of notes in Pianoforte playing, and in Organ playing, are obviously identical with those which govern rapidity of the reiterated actions called for in Wireless and ordinary Telegraphy, and in the use of typewriting machines. The points which, in all cases, must here be mastered, may be summed up under three headings:—

- I. A proper and accurate *timing* and cessation of the muscular actions.
- II. Use of the correct muscles concerned.
- III. Ease and freedom in the action of these muscles.

* "The Act of Touch," LONGMANS, GREEN & Co.
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ROYAL ACADEMY OF MUSIC



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I. Timing

**the
Action.**

(A) Whether we use the Pianoforte Key, or use that of the Wireless, Telegraph, or Typewriter Machine, the mechanical action, in each case, is completed at a *definite movement* during key-descent. At the Pianoforte the hopper slides from underneath the hammer button, and allows the hammer to fall away from the string the moment that sound-production has been completed. All variety of tone-quantity and quality depends, therefore, on *how* we impel the key during its infinitesimally short journey from key-surface level to key-depressed level—nothing can be done after that. Hence, also, the urgent necessity which I have made plain, of *watching key-resistance* during descent; that is, intimately and carefully noticing, feeling and intending what we are actually *doing with* the Pianoforte key during each and every descent of it. Indeed, unless we attend to this, there can be no accurate expression of our musical soul and spirit. (a).

(B) It implies also, at the Pianoforte, a keen realisation of the distance the key has to traverse downwards before the hammer reaches the string, which it does when close down, but before reaching the bed under it. This we can only be kept cognizant of by a constantly keen *aural attention* to the *beginning* of each sound.

(C) Moreover, as every note in a piece of music has a perfectly definite moment when its *commencement* is due, it follows, that if we succeed in making the moment of completed production coincide with that musical requirement, then, clearly, we have also succeeded in accurately *timing* our action. Musically, also, if we have accurately *guided* the movement of each key during descent, alike as to the actual *degree* of speed attained and as to the *mode* of its attainment, and have also let it rise accurately, then, finally, we shall have succeeded in accurately uttering our musical conception of the piece; since quantity of tone depends on the actual speed attained during descent, and quality and control of tone on the mode of attaining that speed (whether gradually or suddenly); while duration, again, depends on the moment the key is allowed to rise.

The problem here, is therefore: (1), to *time* the completion and

(a) See "Act of Touch," "First Principles" (LONGMANS); "Child's First Steps" and "Musical Interpretation" (JOSEPH WILLIAMS).

cessation of the action of *moving* the key at the right moment, musically and mechanically; and (2), to attain the required speed *correctly*, musically and mechanically.

(D) From all this it becomes clear that a great part of the "secret," alike of agility and of *tonal technique*, resolves itself into a careful direction and *cessation* of the given impulse at the right moment of time. If we do not thus accurately *time* this *cessation* we shall inevitably fail to obtain the intended tone, and we shall also preclude the immediate repetition of a note, and hamper almost to extinction all ease in the progression from note to note, or from finger to finger—so called Agility.

The latter problem is the same, alike in playing the Piano, or Organ, and in operating a Wireless, Telegraph or Typewriter Key.

To sum this up: *we cannot repeat the operation on the same key unless we first cease, each time, all the muscular Effort and free Weight bearing down upon it. So long as the effort continues the key cannot rise, and therefore it cannot be re-depressed. Clearly, even the slightest effort thus misapplied beyond the completion of each down-moving operation, will hamper all Agility and Repetition. But where it is required to give duration to the musical note, or to the dash in Telegraphy, then this action of holding the key down must remain perfectly distinct from the action of depressing it; and this action of holding the key down must be perfectly gentle and light. It must not be more forcible than will just suffice to hold the key depressed, or sufficient to enable us to remain conscious of thus holding it down, (b.)*

II. The Correct Actions Muscularly.

(A) The most common blunder, here, is the attempt to provide the required *motive force* by a direct down-push of the whole arm. Such down-push of the whole arm may, or may not, be visible as an actual *movement* of the arm; it may, indeed, be given *without any actual movement* of the hand or finger; and as this baneful action of the arm is

(b) In fact, to do or think *anything* accurately implies that we must concentrate our mind upon it; and that means *timing* our mind upon it. See "Musical Interpretation, its laws and principles," pp. 30, 31, etc. (JOSEPH WILLIAMS.)

thus invisible, it often escapes the notice of the performer himself. Nevertheless, it is precisely such push-exertion of the whole arm downwards and forwards, which is the most potent cause of failure both in agility-technique and tonal beauty. Since such a ponderous action cannot be adequately timed either in its propulsive direction or its cessation it inevitably bars all speed in repetition, and in note or finger succession, and in nicety of control.

In place of such arm-push or jerk, the motive force should be derived, almost solely, from neat exertions of the *finger* and the *hand*; except in extremely loud playing, when a slight trace of down-exertion on the part of the *fore-arm* may be added to the exertion of the hand and finger.

At the Pianoforte, the basis for these exertions of the finger and hand, is always in the nature of a carefully graded and timed actual or incipient *release* of the weight of the arm itself, during the moment of key-depression. Sometimes, indeed, the arm is fully released (left unsupported by its own muscles), sometimes it is only partially released, and sometimes—for agility passages—it is left in a state of precise poise or balance—of incipient release.

For “singing tone,” at the Pianoforte, it is this release of the arm (lapse in its self-support) which should prompt into being the exertions of the finger and hand. But remember, both exertions and weight-release must always be strictly in response to the force felt requisite to *move* the key down at the particular speed and in the particular way required by our musical mood—we must instantly apply our mechanical sense of the key’s resistance, so that we shall be able to fulfil our mood-perception. (See I, ¶A).

In connection with this double muscular requirement—of an actively exerted finger and hand collaborating with a freely *poised* arm, or a partially or fully released arm—we are, however, faced with a real mental-muscular difficulty. For it is difficult at once to gain the knack of perhaps quite violently exerting the finger and hand, without at the same time *exerting* the arm; or to give these two required exertions while leaving the arm poised, or actually

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released, as the case may require. Yet, unless we do acquire this knack, agility and tonal accuracy will remain a closed book to us. There are a number of simple "Relaxation Exercises" which will help us to this necessary discrimination, muscularly. One of the simplest is as follows:—

Exercise
for
Arm-release
in conjunction
with
Finger Exertion.

(a) Cause the arm, hanging freely from the shoulder, to swing to and fro—like a pendulum. It usually does so when one is walking.
(b) While still insisting on this free swing of the arm, now gradually clench the hand, at last quite firmly. Insist on not allowing this clenching of the fingers into the palm of the hand to hamper in the least the continued free swing of the arm, to and fro.

(c) Practise the same exercise; but instead of gradually clenching the fingers upon the palm (as in "b") now do so suddenly and momentarily, although quite forcibly.

Another exercise, to teach the loose-lying hand in conjunction with arm-weight entirely "off" the keyboard, is as follows:—

Allow the hand, supported by its fingers, to lie loosely upon a table (or keyboard) and then sway the *wrist* up and down, while the hand remains in its loose-lying condition.

This, in fact, forms the first of the "Daily Test" exercises shown in my "*Muscular Relaxation Studies*." (c).

Also, often test whether the hand is thus lying loosely upon the keyboard, thus: Simply draw or slide the arm and hand away from the keyboard, or from the edge of the table. If really free, the hand will drop of its own weight, as the fingers slide off the edge.

Both these last are excellent test exercises, since it is impossible for the hand to support any down-push of the arm, or its released weight, while the hand itself is thus lying loosely (and inactive) upon the keyboard, etc.

(B) Another mental-muscular difficulty which constantly faces us, is the fact, that in using the keys of any of the instruments in question, we are compelled to twist the fore-arm so as to bring the

hand into the required horizontal position.—The *natural* (at rest or passive) position of the hand and fore-arm is where the *thumb* is *turned upwards*. The hand can therefore only be turned into the horizontal position (as required at the keyboard), and can only be retained in that position by a *slight exertion* of the muscles which rotate or twist the fore-arm. Evidently, we here require a further muscular discrimination; for we must not allow the required exertions of the finger and hand (against the keys) sympathetically to induce any non-required exertion of these fore-arm rotatory muscles. We must not exert them when *not* required, and when they are required we must not let the opposite ones act, and thus again cause “stiffness.”

Misuse of these rotatory exertions of the fore-arm is probably responsible for more bad execution than anything else; since the exertions and relaxations in question are not necessarily accompanied by any *movements*, and hence remain invisible. Misuse and “stiffening” in this respect will indeed ruin all nicety in tone-response, and will also ruin all ease in *agility* and repetition. (d).

(C) Next, since great accuracy is always required in the *cessation* of the impulse that moves the key down, it follows, in any case, that *the arm itself must be caught up and supported by its own muscles* the very moment that key-depression has been completed. At the Pianoforte, in thick-tone passages, where the relaxed arm is required *during* key-descent, it must, nevertheless, thus be caught up instantly that each key-descent has been completed; while in passages of any considerable agility it should *remain thus self-supported* more or less fully; in such agility-passages it should throughout remain in a perfectly *poised* or balanced condition, so that none (or very little) of its weight rests continuously on the keyboard, or key. But this poise of the arm should be so delicate, that the arm *remains free to vibrate* in sympathy with the finger and hand impulses.

It should particularly be noted that ease in the rapid repetitions of a key-movement, and ease in agility-passages is rendered quite

(d) For further elucidation of these points, see the author's two little booklets: “The Forearm Rotation Element and its Mastery” and “The Child's First Steps.”
(JOSEPH WILLIAMS).

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Moreover, if the key used cannot support (without giving way), even the weight of the loose-lying hand, then the hand itself must also be kept more or less completely self-supported, and poised like the arm. (e).

To sum this up: Do not force the arm down upon the key. Do not use too much weight. Do not misuse the Forearm-rotation element.

Keep the arm self-supported in between the successive actions, even when its weight is used for tone. If necessary, keep the hand also self-supported. See that finger and hand do their work accurately.

III. Ease and Freedom in the required actions. So-called "*stiffness*" (unless caused by disease), again arises from mere lack of mental-muscular discrimination. We wish to exert a certain limb, or portion of it, but in place of *limiting* the exertion to the particular muscle which will serve the purpose, we are likely to commit the error of allowing the *opposite* muscles to act at the same time. Thus results "*stiffness*." Stiffness hence implies a tug-of-war between the *required* action and the *opposite* action of the limb. This is purely a mental difficulty; it implies merely lack of recognition as to which exertion we should make, and which we should *omit*.

One of the simplest ways of realising this matter is purposely to make the exertion as stiffly as possible, and then try completely to omit such sensation of stiffness or impediment. (f).

SUMMARY: (I.) Insist on accurately timing and ceasing the impulse-providing exertion given to each key with the completion of its descent.

(e) For instance, with a *shuttle* typewriter, such as I myself use, the springs keeping the keys at surface-level are so slight that they will not successfully support the *fully*-released weight of my (rather large) hand; therefore, the hand must here be kept in its more or less fully self-supported state, in between the successive typing impulses. Nevertheless, I find, in very rapid typing, that I may allow greater latitude to the hand, since the greater number of keys covered in a short time will bear more weight. Most piano keys, however, present sufficient resistance at surface-level to allow the free-set hand to repose upon them without their being depressed.

(f) There are numerous exercises which will enable one to acquire such muscular discrimination in all directions, but owing to lack of space, the reader must here again be referred to the author's "*Muscular-Relaxation Studies*" (Bosworth).

(II.) Eliminate *Down-arm Force*. Depend instead upon the exertion of the finger and hand alone.

For thick tone, an actual release of *Arm-weight* during *key-descent* is required as a basis. . . . Accurately, however, cease all weight and exertion with the completion of each individual operation, except the slight residue required to retain the key depressed, where necessary.

Insist, therefore, on the *arm* being in a perfectly easily *poised* condition—supported by its own muscles the very moment that *key-descent* is complete—maybe with the hand lying loosely upon the keyboard; or, maybe with the hand, itself, also self-supported.

(III.) Insist on limiting the muscular exertions to those required, eliminating all contrary exertions.

If these three injunctions are loyally carried out in practice, it will be found that the required actions can be given with perfect freedom. Agility, as well as self-expression, musically, will then be found an easy matter.

TOBIAS MATTHAY.

Haslemere, July, 1918.